Measurement Facilities

- **From the DOE Charge to this workshop:**

  Are additional investments in existing NP facilities needed?
  Yes.

  Many of the needed facilities get most of their operating funds from outside NP. Some have very limited beam time.

  Does NP have (all) the needed tools?
  No.

No Single Facility Can Provide All the Needed Data

- **Neutron sources are complementary.**
  van de Graaff: "activation", elastic and inelastic scattering…
  Electron linacs: high resolution and high accuracy (n,γ), σ_t, (n,f), scattering,…
  Proton linacs: (n,γ) and (n,f) for very small and radioactive samples, measurements at MeV energies and above,…

  Need to have all these neutron facilities operating to be able to fulfill all the likely data needs.

- **Charged-particle facilities.**
  Haven't yet heard much about why they might be needed.
  Defer until later today?

Aging Facilities

- **Examples:**

  RPI – recently underwent refurbishment of accelerator systems. In relatively good shape, but klystrons are expensive and who will make new ones?

  ORELA – just starting refurbishment of accelerator systems. Also, many of the detectors, electronics, and data acquisition systems are in need of updating.

  LANSCE – major refurbishment proposed.

In The Longer Term

- **“Superpulses” at WNR.**

  High flux across the energy range of interest with excellent resolution.

- **Beam line at the SNS.**

  20x the flux of Lujan.

  More radioactive samples (decay background is very nonlinear).

  Would also enable new measurements in nuclear astrophysics and symmetry studies.